

Attorney Docket No. 70868/49940
U.S.S.N.: 09/668,071
Filed: September 22, 2000
Applicants: K. FUJIWARA, et al.
Art Unit: 2674
Examiner: H. Nguyen
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I. FORMAL MATTERS

The PTO Form 948 attached to the Office Action indicates that the drawings filed on September 22, 2000 are objectionable. Applicant will prepare and file corrected formal drawings in due course.

Applicant notes with appreciation the Examiner's indication that the Office Action acknowledges the claim to priority and indicates that the certified copies of the priority documents filed on September 22, 2000 have been received.

The Office Action does not include a copy of the PTO Form 1449 that was submitted in the Information Disclosure Statement filed on September 22, 2000. Applicant respectfully requests the Examiner to send the undersigned a copy of this PTO Form 1449 with each of the references initialed by the Examiner.

II. PRIOR ART REJECTIONS

A. Claims 1-5 and 8

Claims 1-5 and 8 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,742,367 (Kozaki). This rejection is traversed.

Applicant submits that Kozaki does not teach or suggest a shield member that shuts off an image, as recited by independent claim 1, on which claims 2-5 and 8 depend. The Examiner asserts that the liquid crystal shutter 4 of Kozaki shuts incident light during display operation, and allows incident external light to be transmitted during not-display operation. Applicant submits that the liquid crystal shutter 4 of Kozaki does not shut off a displayed image. The liquid crystal shutter 4 cannot perform this function because it is disposed between the liquid crystal panel 1 and the solar-cell panel 5, as shown in Fig. 1. The liquid crystal shutter 4 of Kozaki

merely blocks external light from the solar-cell panel 5 during display operation and allows incident external light to be transmitted into the solar-cell panel 5 during non-display operation in order to charge the solar-cell panel 5 (see Fig. 1 and column 3, lines 35-64). As shown in Fig. 1, the liquid crystal panel 1 is always exposed to the viewing window 6 and the image in the liquid crystal panel 1 is never "shut off" by the liquid crystal shutter 4.

Further, Applicant submits that Kozaki does not teach or suggest a drive mechanism for driving the shield member in synchronization with display of the image, as recited in claim 1, on which claims 2-5 and 8 depend. The liquid crystal shutter 4 of Kozaki does not shut off an image in synchronization with display of the image. As presented above, the liquid crystal shutter 4 of Kozaki merely blocks external light from the solar-cell panel 5 during display operation and allows incident external light to be transmitted into the solar-cell panel 5 during non-display operation in order to charge the solar-cell panel 5. The liquid crystal shutter 4 of Kozaki performs no function related to the display of the image.

Also, since the liquid crystal shutter 4 is disposed between the liquid crystal panel 1 and the solar-cell panel 5, the liquid crystal panel 1 does not intercept light to or from the liquid crystal panel 1, as recited by claims 2, 3 and 4.

Regarding claim 5, the Examiner asserts that the liquid crystal shutter 4 of Kozaki "can be fabricated in an endless belt shape." Applicant submits that the test for anticipation under 35 U.S.C. § 102 is not what a prior art reference "can be used for." Rather, the test is what is taught by, or inherent in, a reference. Since a shield member comprising an endless belt is neither taught by, nor inherent in, Kozaki, Applicant submits that the rejection of claim 5 under 35 U.S.C. 102(e) is improper.

Therefore, since Kozaki does not teach each and every element of claims 1-5 and 8, Applicant submits that the rejection of claims 1-5 and 8 under 35 U.S.C. § 102(e) is improper.

Regarding new claim 9, Applicant submits that Kozaki does not teach or suggest a shield member shuts off an image display between frames.

B. Claim 6

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kozaki. This rejection is traversed.

The Examiner asserts that a liquid crystal projection device is well known in the art and that it would have been obvious to add an optical system to the liquid crystal image display device of Kozaki in order to magnify and project light. Applicant submits that Kozaki does not teach or suggest a shield member that performs the function recited in claim 6. In addition, Applicant submits that Kozaki does not teach or suggest a shield member that shuts off an image, and a drive mechanism for driving the shield member in synchronization with display of the image, as recited by independent claim 1, on which claim 6 depends, as presented above in the discussion of the rejection of claim 1 under 35 U.S.C. § 102(e). Accordingly, Applicant submits that the rejection of claim 6 under 35 U.S.C. § 103(a) is improper.

C. Claim 7

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kozaki in view of U.S. Patent No. 5,654,756 (Takahashi). This rejection is traversed.

The Examiner relies on Takahashi for the teaching of a vertical sync signal having a constant cycle. Applicant submits that Takahashi fails to make up for the

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above-noted deficiencies of Kozaki. Therefore, since the combination of Kozaki and Takahashi fails to form the invention defined by claim 7, Applicant submits that the rejection of claim 7 under 35 U.S.C. 103(a) is improper.

Also, Applicant submits that Takahashi provides no teaching or suggestion to apply a vertical sync signal to drive a shield member to shut off the image displayed by the image display device, as recited by claim 7.

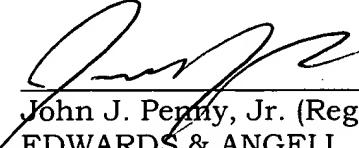
Regarding new claims 10-13, Applicant submits that new claims 10-13 are not anticipated by, and would not have been obvious over, the cited and applied prior art references for at least the reasons presented above with respect to claims 1, 8, and 9.

Based on the foregoing, Applicant submits that the present application is in condition for allowance. If the Examiner has any questions, or believes that a telephone conference would expedite the prosecution of the present application, Applicant respectfully requests the Examiner to contact the undersigned at the telephone number listed below.

Applicant(s) believes that no additional fees are due for the subject application. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

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Version of Amendments With Markings to Indicate Additions and Deletions

IN THE SPECIFICATION:

Paragraph beginning on page 23, line 12:

FIG. 8 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with a sixth embodiment of the invention. FIG. 9 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with a seventh embodiment of the invention. FIG. 10 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with an eighth embodiment of the invention. In the above-mentioned fifth embodiment, the mechanism for intercepting the light applied [o] to the transmission-type liquid crystal panel 1 is shown. However, the liquid crystal optical shutter 16 is used not only for this mechanism but also for a mechanism as shown in FIG. 8 for intercepting the display light from the transmission-type panel 1, a mechanism as shown in FIG. 9 for intercepting the reflected light of the reflection-type panel 11 or a mechanism shown in FIG. 10 for a projection panel. Therefore, the liquid crystal optical shutter 16 can be used for all liquid crystal panels of transmission, reflection and projection types.

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IN THE SPECIFICATION:

Paragraph beginning on page 23, line 12:

FIG. 8 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with a sixth embodiment of the invention. FIG. 9 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with a seventh embodiment of the invention. FIG. 10 is a simplified sectional view showing a general configuration of an image display apparatus in accordance with an eighth embodiment of the invention. In the above-mentioned fifth embodiment, the mechanism for intercepting the light applied [o] to the transmission-type liquid crystal panel 1 is shown. However, the liquid crystal optical shutter 16 is used not only for this mechanism but also for a mechanism as shown in FIG. 8 for intercepting the display light from the transmission-type panel 1, a mechanism as shown in FIG. 9 for intercepting the reflected light of the reflection-type panel 11 or a mechanism shown in FIG. 10 for a projection panel. Therefore, the liquid crystal optical shutter 16 can be used for all liquid crystal panels of transmission, reflection and projection types.

IN THE CLAIMS:

1. (Amended) An image display apparatus comprising:
 - an image display device driven in a continuous light-emitting mode, for displaying an image;
 - a shield member capable of shutting off an image displayed by the image display device, for a constant period; and
 - a driven mechanism for driving the shield member in synchronization [of] with display of the image by the image display device.

7. (Amended) The image display apparatus of claim 1, wherein the image display device carries out image display in synchronization with a vertical sync signal having a constant cycle, and
 - the drive mechanism drives the shield member in synchronization with the vertical sync signal to carry out the [interception] shutting off of the image for the constant period.